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ABSTRACT

This paper discusses a national survey undertaken in 1980 to determine the attitudes and knowledge about world affairs of 3,000 randomly selected undergraduate students. The purpose of the survey was to provide information to aid educational decision makers as they strengthen the international perspective of the undergraduate curriculum. The specific purpose of this document is to inform geographers about the scope and nature of the geography-related content contained in the survey. Because approximately 75% of the survey content was based on information currently taught in college geography courses (i.e., environment, food, health, international monetary and trade relations, population, energy, racial and ethnic issues, human rights, war and armaments, arts and culture, religion, relations among states, and distribution of natural characteristics), the author believed that geography educators would be particularly interested in the survey results. Findings from analysis of responses to the 101 test items on the survey indicated that two-year students scored 40%, freshmen scored 42%, and seniors achieved 50%. For all three groups, four issues were most frequently understood--arts and culture, war and armaments, racial and ethnic issues, and international monetary and trade relations, and one issue--religion--was consistently least understood. The conclusion is that geography educators can help students understand world affairs if they place more emphasis on the teaching of world and regional geography, and, particularly, on the interdependence and connectivity of places within the global system. Tabular and narrative information is presented on responses to specific items according to a variety of variables, including grade level, item difficulty, and number of geography courses taken. (DB)

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CURRICULAR IMPLICATIONS OF A NATIONAL SURVEY OF GLOBAL UNDERSTANDING

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Presented at

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CURRICULAR IMPLICATIONS OF A NATIONAL SURVEY OF GLOBAL UNDERSTANDING

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In February 1980, Educational Testing Service conducted "A Survey of Global Understanding" with a nationally representative random sample of 3,000 undergraduate students at 185 U.S. institutions. The survey, part of the Council on Learning's "Education and the World View" program, tested three populations: four-year college freshmen and seniors and two-year college students. It consisted of more than 450 variables covering personal characteristics, academic and nonacademic experience, and attitudes and knowledge about world issues, events, patterns, and processes.

One purpose of the Council's program is to make recommendations to educational decision makers for changes in the curriculum that will strengthen the international perspective of undergraduate education. Geographers should know, and will want educational decision makers to know, that the survey contains a large amount of content that is presently taught in college geography courses. The survey may also offer suggestions to geographers about curricula. This paper's purpose is to assist in these tasks.

Test Development

The ETS staff was guided by an eight-member, interdisciplinary Assessment Committee. For that portion of the survey intended to assess knowledge, the Committee selected 13 topics or issues for which questions were to be written, namely, Environment, Food, Health, International Monetary and Trade Relations, Population, Energy, Racial and Ethnic Issues, Human Rights, War and Armaments, Arts and Culture, Religion, Relations Among States, and Distribution of Natural Characteristics. The Committee sought to tap knowledge not only of contemporary

world issues but also to assess understanding of related patterns and processes through time and space.

Multiple-choice questions were written and a pool of more than 400 items was reduced to 96 questions. Five questions from an earlier survey were added, bringing the total to 101. The final set of items shows an emphasis on the social sciences from an American perspective. Nevertheless, there was no formal effort to include questions because they represented particular disciplines. The questions that eventually appeared survived a process of interdisciplinary consensus.

With so few questions on such a large array of topics, the test does not assess knowledge deeply on any one topic; rather its strength lies more in its breadth of coverage. Given the lack of prior operational definitions of global understanding and the project's many other constraints, such as the multiple-choice testing of 3,000 students, the Committee was generally satisfied that the survey was a good first attempt at measuring students' attitudes and knowledge about the world. The Committee and the ETS specialists believed that they had achieved the goals of developing a test of important knowledge with a level of difficulty within the capability of most college students, and that much, if not all of the content could be found in college courses and in the media.

Selected Results

In view of the above, we should not be satisfied or surprised with the results. The mean score for two-year students was 40. As the test had 101 items, mean scores are virtually equal to the percentage correct. Freshmen scored 42, slightly higher than two-year students. Seniors achieved a mean of 50, eight points higher than freshmen, a fact for which we should probably be grateful, even though the magnitude of the difference may seem small. Less

than 15 percent of the seniors and less than 10 percent of the freshmen and two-year students got more than two-thirds correct. We should not be satisfied that such a small proportion of the students have the knowledge necessary for an adequate global understanding.

On the other hand, the results are not surprising. The intent of the test was to measure what should be known at a criterion level or to measure what needs to be known if global events and processes are to be understood. The vast knowledge required for global understanding is not commonly gained and that fact is reflected in the students' performances.

Having assigned questions to the 13 issues, correlations were calculated on scores between issues and between each issue and the total test. Table 1 gives the correlations for seniors between each issue and the test. For brevity, all responses to be mentioned are for seniors, unless otherwise indicated. The highest correlations show issues that reflect most faithfully the distinctions between high scorers and low scorers. A relatively high correlation does not mean that students knew more about that issue than most others, but only that those who did well on the test as a whole did well on that particular issue.

Four issues were most frequently found at the top for all three populations. These were Arts and Culture, and War and Armaments, followed with less consistency by Racial and Ethnic Issues and International Monetary and Trade Relations. Further down in the rankings more divergence developed, but toward the bottom of each list were Energy and Food; Religion was consistently last.

Two series of subscores were calculated. The first, issue mean scores, are given in Table 2. Some caution is needed here because the Committee made no special effort to balance the mean difficulty from issue to issue. Hence the relative difficulty of each issue reflects both the selection of questions and the ability of the students. Seniors scored highest on every issue, and

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freshmen scored higher than two-year students on every issue except two, namely, Energy and Racial and Ethnic.

The second series of subscores are for six content categories. These are given in Table 3. The categories are shown as three pairs of contrasting content, namely, Humanities and Social Science, Current and Historical, and United States and Developing Nations. Seniors scored highest on every one of the six categories and freshmen scored higher than two-year students on every category. One of the pairs--U.S. and Developing Nations--stood out as having the best performance across all three populations, and Historical showed the lowest scores of any of the categories for all populations.

We turn now to selected correlates of test performance, that is, to those variables from the survey of background, experience, and attitudes that matched most strongly with knowledge. Table 4 lists all the variables that correlated .20 or higher with seniors' scores. One important finding was that students whose main source of information about current events was the print media outscored those who indicated reliance on the electronic media. One experience variable not shown asked students for the numbers of courses they had taken in college from a list of 19 subjects thought to be directly related to global understanding. Although none of the correlations for this variable reached .20, the three highest for seniors were with philosophy, economics, and geography, virtually tied at .15.

The lack of high correlations between knowledge and exposure to particular academic experiences is disappointing. Although average knowledge scores did differ both for the various academic majors and for the amount of course work taken in each of the 19 subjects, these differences may not be unambiguously interpreted as curriculum effects. Since intellectual ability and socioeconomic status were highly related to knowledge scores, self-selection into majors and

into particular courses may account for some or even much of the score differences. Furthermore, average numbers of courses taken in these areas were low. For example, the two subjects ranking highest of the 19 in the numbers of courses taken were literature and history, with means of only 2.23 and 2.20 courses, respectively. The mean number of geography courses taken by seniors was a mere .56; 66 percent of seniors took no geography. The very rareness of these experiences renders it unlikely that they could have an overall effect. Finally, although we have counts of majors and courses taken, we have no knowledge of the degree to which the content of those majors and courses dealt with global knowledge and understanding. Students did report, however, having much more discussion about world affairs in high school classes than in college classes. Given all this, the ETS conclusions must be limited to what disciplines were effective, or more accurately, were associated with knowledge, rather than what experiences could be effective given greater student exposure to them.

The test results according to college major are shown in Table 5. History majors outperformed others, and the worst score by far was by education majors. Foreign language majors scored below the senior mean of 50. Unfortunately, the survey did not separate out geography majors. They are hidden in one or perhaps two other categories, probably Social Sciences or Biological/Physical Sciences.

Geographic Content and Selected Results

In a report coming out in The Professional Geographer, I show that the knowledge test contains a large amount of geography as part of an argument for expansion of geography in the curriculum in order to strengthen global knowledge and understanding. By using several schema, it was shown that about three-fourths of the questions have geographical content. We will now indicate test

results on those questions.

For this purpose, we will use one of the schemes considered in the PG report, namely, that of Browning, who offered eleven criteria for judging the geographic content of topics, as shown in Table 6. Out of the 96 questions for the 13 issues, 74 of them satisfied one or more of Browning's criteria. The criteria occurring most often were "use in regional synthesis" and "distribution."

The set of 74 geography items was only slightly more difficult than the test as a whole. The mean score for seniors was 49, while for the total test it was 50; corresponding scores for freshmen were 41 and 42.

Table 7 shows the numbers of total questions and of geography questions in each issue. Only the issue of Human Rights was not represented by geography items. Table 7 also compares the issue mean scores of all items with geography items.

We now hone in on a selection of geography items. The six questions in List 1 proved least difficult in that these were the only items on which more than 80 percent of seniors responded correctly. The senior mean was 85 and the freshmen mean on these six questions was 78. In only one, #1, did the correct senior response group have a lower mean score on the total test than any incorrect group, which may indicate a misconception among a small percentage of above-average seniors.

List 2 represents an attempt to identify misconceptions within the set of geography questions, and List 3 gives a more convenient summary of these. The Committee tried to construct questions whose incorrect answer choices would help sort out the misinformed from those who could only guess at an answer. The ETS staff thought that items showing student misconceptions might be systematically identified where able students grouped in their choice of one or more of

the incorrect answers. For this purpose, they defined groups of able students as those whose mean test score was above the average of their peer group. Of the total 101 questions, 24 met this criterion in all three student populations; 14 of these were judged to be geography items. The average score for seniors on these 24 misconception items was 31 percent.

List 2 is composed of 19 items that meet two criteria. Each drew incorrect responses from groups of able students, and each satisfied two or more of Browning's criteria. The mean difficulty of these 19 questions was greater than that of the entire geography set. The seniors' mean score was 35 compared with a mean of 49 for the set. Individual item difficulty ranged from only 11 percent to 66 percent correct.

The questions in List 2 represent nine of the 13 issues. The items are ordered in the list by most commonly occurring issue. For example, the first five items belong to the Energy issue, the next three are questions in the Food issue, and the next three are in the Racial and Ethnic category.

The fact that most of these 19 questions ask for conceptual understanding as opposed to knowledge of simple facts tends to support the operational definition used to select misconception items. Most of the items deal with ideas that would be most likely learned in academic courses rather than from the news media or other nonacademic experiences.

Seven of Browning's criteria are met in these 19 questions, as shown in Table 8. The dominantly occurring criteria are "use in regional synthesis" and "distribution," followed by "physical environment" and "location."

List 2 does not contain all of the most difficult geography items. Two difficult questions not included that have strong geography content are given in List 4, along with seniors' data. Responses to the first reflect a lack of knowledge about the shift in the Third World from a subsistence to a market economy and its ramifications on local food supply. The heavy response to

incorrect option 1 points to a popular misconception about a relationship between food resources and population in much of the Third World. Responses to the second question indicate a lack of knowledge of the cultural diversity of places that have received attention in the news because of serious internal conflicts. The strong choice of incorrect option 2 may suggest the tendency to overestimate the cultural diversity of the U.S.

Lacking time now to comment further on misconceptions, I can only encourage you to mull over them on your own for whatever information they may offer. We now turn to conclusions and implications.

Conclusions and Implications

The survey was not a test of what geographers said students should know about the world, but rather what an interdisciplinary group said they should know. Questions were developed for topics believed to tap global understanding rather than knowledge of particular disciplines per se. Nevertheless, at least three-fourths of these questions satisfy criteria that geographers often use for judging geographic content. Thus without major influence of professional geographers to bias the test's development, the test is nevertheless shown after the fact to draw heavily on geography, including 14 of the 24 questions indicating misconceptions of above-average students in all three populations.

One distressing fact is that only a miniscule percentage of students take much geography--college geography reaches only half the college population and then with only a single course. It seems reasonable to infer that students would have performed better if they had taken more geography. This is not to suggest that geography can contribute all that is needed for global understanding. Such understanding comes from many sources: several academic disciplines, the media, travel, and other forms of experience. Nevertheless, geography's

inferred potential contribution is pathetically far from being realized. These facts and implications should be forcefully communicated to educational decision makers and to the public.

As we do this, we might also ask whether our own fences need mending. What needs changing most in geography's curriculum if we are to more fully contribute to education for global understanding? Global education should not be the only item on the agenda of geographic education. Geography embraces all scales of analysis from personal to global space, and fundamental geographic concepts apply across this continuum. Nevertheless, if we are to respond as geography teachers to the challenges of improving our students' global perspectives, we should make a concerted curricular effort at regional and global scales. The most commonly occurring geographic criteria in the Survey of Global Understanding are those dealing with regional knowledge and global distributions.

We should put more emphasis on the teaching of world and regional geography, not with encyclopedic assemblages, but rather with stress on the dynamics of the interdependence and connectivity of places within a global system. Where our teaching resources are small, we should at least teach a World Geography course. It should include comparisons of human and natural systems of regions, changes in the interconnections and interdependence of places and peoples, explanations of patterns of associated geographic distributions, and global issues related to resources, population, environments, economies, and cultures. Place names and locations should be systematically introduced. Where our teaching resources are more abundant, we should build upon such a world course with separate courses on major regions. These should stress the position of the regions in global context and in terms of world patterns and processes. Such curricular adjustments would not only revitalize an important traditional interest of geography, but would also offer an educational component that knowledgeable nongeographers believe important to global understanding. In the risky game of curricular survival, we would be playing to our strength.

TABLE 1

CORRELATIONS BETWEEN SENIORS' SCORES ON EACH ISSUE AND ON THE TOTAL TEST

Arts & Culture	.709
War & Armaments	.689
Racial & Ethnic	.666
Relations Among States	.656
International Monetary & Trade Relations	.646
Environment	.581
Distribution of Natural Characteristics	.570
Population	.538
Energy	.522
Human Rights	.522
Health	.491
Food	.428
Religion	.375

TABLE 2

ISSUE MEAN SCORES FOR SENIORS*

Religion (6)	25.2
Relations Among States (10)	36.9
Energy (9)	41.4
Food (7)	47.7
Human Rights (6)	50.0
Environment (5)	50.6
Racial & Ethnic (8)	51.1
International Monetary & Trade Relations (9)	52.0
War & Armaments (8)	53.3
Population (10)	54.2
Arts & Culture (8)	60.0
Health (6)	62.7
Distribution of Natural Characteristics (4)	67.5

*In parentheses are the numbers of questions in each issue.

TABLE 3

CONTENT CATEGORY MEAN SCORES FOR SENIORS*

Humanities (27)	48.7
Social Sciences (73)	50.4
Current (60)	50.4
Historical (35)	46.6
United States (26)	51.3
Developing Nations (22)	56.4

*The numbers of questions assigned to categories are in parentheses.

TABLE 4

CORRELATIONS $\geq$ .20 BETWEEN SENIORS' TEST PERFORMANCE AND OTHER SURVEY VARIABLES

Background Variables:	
White or Caucasian	.24
Experience Variables:	
SAT Verbal Score	.40
SAT Math Score	.32
ACT Score	.64
College GPA	.26
Course(s) taken in college perceived to contribute to global awareness: Economics	.21
Been in country other than U.S.	.22
Media Variables:	
When reading a newspaper, usually reads international articles	.30
When watching TV, usually watches science specials	.20
With time to read only 4 headlines, would read "Soviet Jews Denied Exit Visas"	.20
Frequency of newspaper reading	.21
When reading a newspaper, usually reads financial section	.22
Attitude Variables:	
Anti-Chauvinism	.28

TABLE 5

MEAN TEST SCORES FOR SENIORS

ACCORDING TO COLLEGE MAJOR

History	59.3
Mathematics	54.1
Engineering	53.3
Social Sciences	52.8
Biological/Physical Sciences	51.7
Business/Accounting/Finance	51.3
Music	50.2
Foreign Languages	50.2
English/Drama/Communications	48.8
Agriculture	48.2
Art	47.7
Vocational/Technical	45.0
Education	39.8

TABLE 6

CRITERIA FOR JUDGING GEOGRAPHIC CONTENT OF TOPICS AND

NUMBERS OF QUESTIONS ASSIGNED TO EACH*

Use in regional synthesis?	62
Distribution? (patterns? spatial variability?)	53
Location or locational decision making?	28
Physical environment?	28
Spatial interaction?	20
Use of land?	18
Spatial diffusion?	5
Spatial behavior?	4
Distance and direction?	0
Situation or relative location?	0
Perception of environment?	0

*Source of criteria: Clyde E. Browning, "The Question, 'But Is It Geography?'--Revisited or Are There Criteria for Establishing the Geographic Content of Topics?" The Professional Geographer, 26 (1974), 137-39.

TABLE 7

SENIORS' ISSUE MEAN SCORES FOR ALL QUESTIONS

AND FOR GEOGRAPHY QUESTIONS

Issue	All Questions		Geography Questions	
	No. of Questions	Score	No. of Questions	Score
Religion	6	25.2	5	28.1
Relations Among States	10	36.9	8	37.8
Energy	9	41.4	8	41.1
Food	7	47.7	7	47.7
Human Rights	6	50.0	0	--
Environment	5	50.6	5	50.6
Racial & Ethnic	8	51.1	7	45.8
International Monetary & Trade Relations	9	52.0	7	49.6
War & Armaments	8	53.3	3	61.8
Population	10	54.2	10	54.2
Arts & Culture	8	60.0	6	59.3
Health	6	62.7	4	68.5
Distribution of Natural Characteristics	4	67.5	4	67.5
Total	96		74	

LIST 1

THE LEAST DIFFICULT GEOGRAPHY ITEMS FOR SENIORS:

MORE THAN 80 PERCENT CORRECT

(*=correct answer)

(1) 5. Since the Second World War, most international migration has been from the

(1) more developed to the less developed countries
(2) more developed to the more developed countries
(3) less developed to the less developed countries
*(4) less developed to the more developed countries

(2) 7. Since 1950, the percentage of total population in Africa, Asia, and Latin America living in cities has

*(1) increased
(2) remained stable
(3) decreased slightly
(4) decreased greatly

(3) 10. The most important worldwide commercial source of energy today is

(1) coal
(2) nuclear power
*(3) petroleum
(4) solar power

(4) 13. The typical meal in the poor countries of the world consists of

(1) meat, vegetables, and a dairy product
*(2) cereal grains and a side dish of vegetables
(3) meat or fish and cereal grains
(4) an egg or other dairy product, vegetables, and fruit

(5) 24. The major factor in the elimination of smallpox in the 1970's as an epidemic threat to the world was

(1) the introduction of better sanitation
(2) the introduction of better methods of treatment
(3) a decline in the virulence of the virus
*(4) the implementation of worldwide vaccination programs

(6) 55. Which of the following accounts for the death from infectious diseases of more than twenty million American Indians after their early contacts with white people?

(1) An inadequate diet that made the Indians unhealthy
*(2) The fact that the Indians had low resistance to diseases previously unknown in the Americas
(3) An increased virulence of disease organisms resulting from the crossing of European and American strains
(4) Deliberate germ warfare waged by Europeans against the Indians

LIST 2

SENIORS' PERFORMANCE ON 19 SELECTED GEOGRAPHY ITEMS*

*Items selected on bases that (1) "able" senior students (those whose mean test scores were higher than 50.46, the mean for the senior population) grouped in their choice of one or more of the incorrect answers; and (2) each item satisfied two or more of Browning's criteria for geographical content.

Items are ordered by Issue (Energy, items 1-5; Food, 6-8; Racial/Ethnic, 9-11; Religious, 12-13; Population, 14-15; Relations among States, 16; Environment, 17; International Monetary and Trade Relations, 18; Health, 19) and within each Issue by level of difficulty, from most to least.

Below each question are the percentages of seniors that chose each response (or omitted the question) and the performance level ("Mean Score") of each response group on the total test. Asterisks show the correct answer.

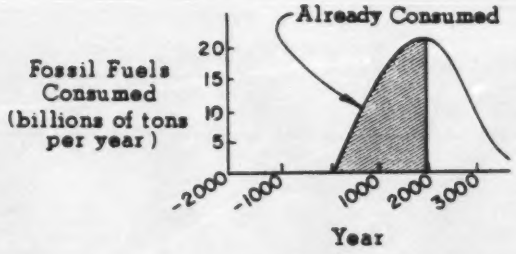
(1) 37. The economy of which of the following is LEAST vulnerable to increases in the price of oil or to decreases in the supply of oil?

(1) The United States
(2) Japan
(3) West Germany
(4) Brazil

	Omit	1*	2	3	4	Total
Percent	0.93	15.07	7.48	6.26	70.26	100.00
Mean Score	28.39	53.25	43.71	44.42	51.41	50.46

(2) 36. Which of the following curves best represents the estimates of experts about the pattern of the world's past and possible future consumption of fossil fuels such as petroleum, natural gas, and coal?

(1)



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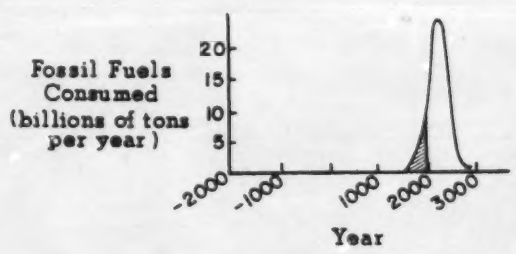

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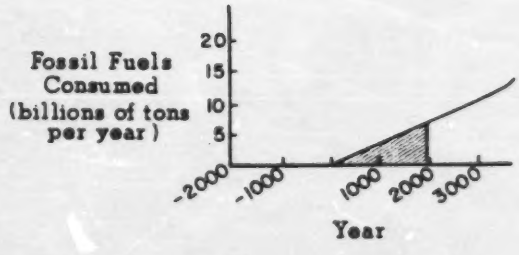

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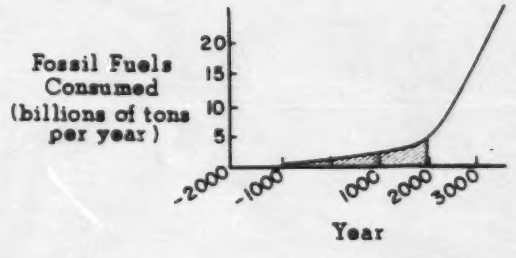


	Omit	1	2*	3	4	Total
Percent	3.76	41.52	28.22	16.72	9.78	100.00
Mean Score	35.45	50.50	55.73	45.80	48.85	50.46

(3) 104. Which of the following lists is composed entirely of members of OPEC (Organization of Petroleum Exporting Countries)?

(1) Iran, Iraq, Kuwait, Egypt
(2) Great Britain, Norway, Mexico, United Arab Emirates
(3) Syria, Lebanon, Libya, Ethiopia
(4) Venezuela, Indonesia, Nigeria, Saudi Arabia

	Omit	1	2	3	4*	Total
Percent	4.61	57.50	2.14	6.69	29.06	100.00
Mean Score	31.28	49.66	41.35	53.64	55.02	50.46

(4) 102. Increasing petroleum prices have created problems for non-oil producing developing countries. Reasons for this include all of the following EXCEPT the fact that such countries

(1) are integrated to world economies through the need for manufactured goods
(2) are becoming increasingly committed to agricultural programs that require higher energy inputs
(3) have received less foreign aid because of the impact of oil price increases on donor countries
(4) do not have alternate domestic energy sources available to them in the short run

	Omit	1	2	3*	4	Total
Percent	6.31	13.72	21.36	31.44	27.17	100.00
Mean Score	36.78	51.68	50.17	52.85	50.49	50.46

(5) 103. Which of the following helps to explain the ability of OPEC (Organization of Petroleum Exporting Countries) to raise oil prices since 1973?

(1) OPEC countries have become controlled uniformly by groups hostile to capitalism and the West.
(2) OPEC countries have experienced a significant growth in their military strength.
(3) There has been a large increase in total world industrial production and transport since the early 1960's.
(4) The value of the dollar has declined.

	Omit	1	2	3*	4	Total
Percent	5.59	21.99	8.41	40.18	23.83	100.00
Mean Score	37.53	51.27	45.77	53.61	49.09	50.46

(6) 26. As a global problem, inadequate nutrition is largely the result of

(1) large populations living in countries whose production of foodstuffs is insufficient to provide the minimum number of calories required by each person each day
(2) world population having outgrown the world's ability to produce enough food to meet each person's daily caloric requirements
(3) large populations living in countries in which inequalities of income result in a significant portion of the population being unable to buy the foods produced by others
(4) trade controls that prevent food surpluses produced by some countries from being exported to other countries that want to buy them

	Omit	1	2	3*	4	Total
Percent	1.11	61.26	10.44	24.29	2.90	100.00
Mean Score	36.85	51.92	43.72	50.49	48.84	50.46

(7) 90. In China one-third of the farmland and sixty per cent of the rural labor force are devoted to growing rice. The major advantage to China of growing rice is that

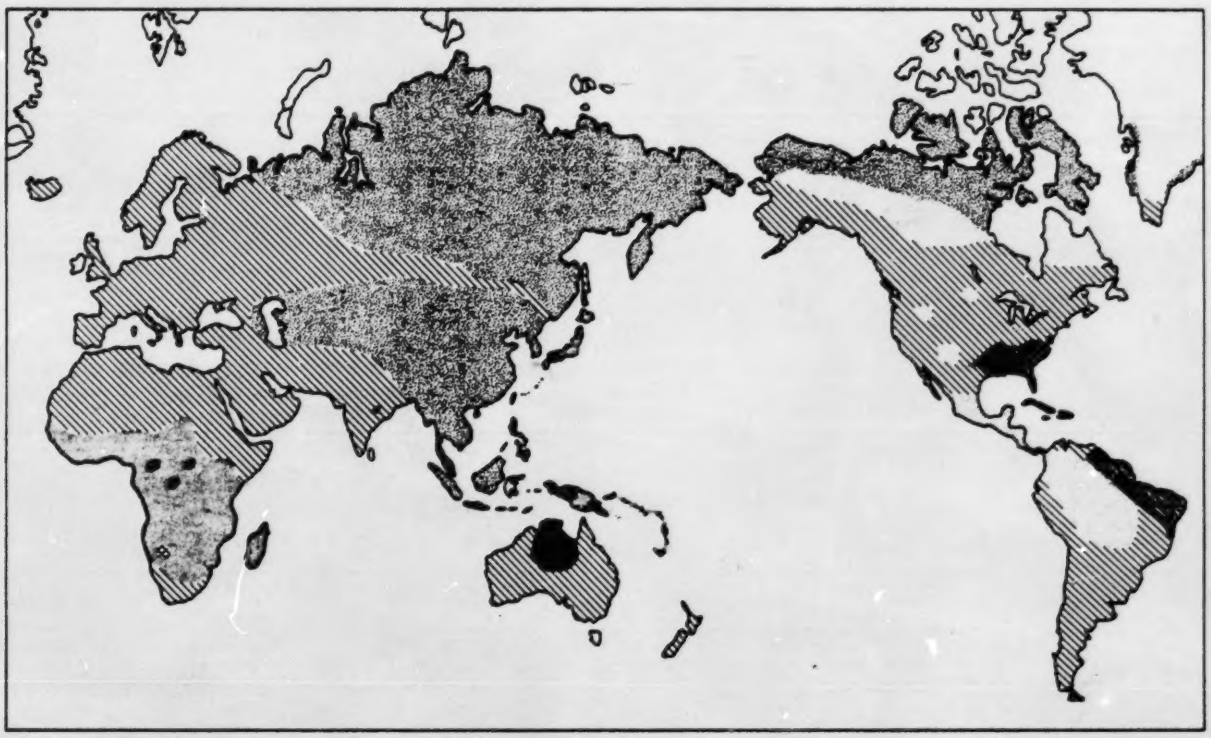
(1) China has surplus farm labor and few alternatives for employment
(2) the weight, the nutrient, and the market value of rice per unit of land are much higher than those of other basic grain crops
(3) rice, as the major grain involved in world trade, is principally grown for foreign markets to earn foreign exchange
(4) the extra labor required for growing rice largely consists of women and children, a fact that makes the cost of growing rice less than that of growing other grains

	Omit	1	2*	3	4	Total
Percent	4.11	26.15	30.41	14.43	24.90	100.00
Mean Score	34.25	53.95	54.06	42.50	49.69	50.46

(8) 88. Most countries that have a majority of their populations working in agriculture and earn most of their foreign exchange from agriculture exports are finding economic development difficult because

(1) there is a declining world market for agricultural products
(2) they can only develop through mechanization of agriculture, but this will create large-scale unemployment
(3) they are especially vulnerable to both crop failures and world price fluctuations
(4) the income of the majority of the population depends upon export earnings

	Omit	1	2	3*	4	Total
Percent	3.28	2.52	21.50	65.84	6.86	100.00
Mean Score	29.63	44.14	51.18	51.81	47.60	50.46



(9) 49. The general distribution of which of the following is shown on the map above dated 1960 ?

(1) Human racial groups
(2) Major world religions
(3) Major world language groups
(4) Cereal grains

	Omit	1*	2	3	4	Total
Percent	7.39	30.05	11.91	11.34	39.31	100.00
Mean Score	44.34	52.03	45.47	44.98	53.50	50.46

(10) 54. Which of the following is a correct statement about the historical sources of population in North and South America?

(1) During the mid-eighteenth century struggle between England and France for dominance in Canada, the French were a minority of the Canadian white population.
(2) By the beginning of the nineteenth century, all major areas of European settlement on the South American continent were under Spanish domination.
(3) The first sizable number of people of Mexican descent in the United States were resident in areas conquered or annexed by the United States in the mid-nineteenth century.
(4) In the massive influx of European immigrants into the United States during the late nineteenth and early twentieth centuries, Northern Europeans predominated over immigrants from Eastern and Southern Europe.

	Omit	1	2	3*	4	Total
Percent	6.44	8.38	19.65	35.13	30.40	100.00
Mean Score	40.79	47.51	48.00	54.32	50.46	50.46

(11) 53. In the seventeenth and eighteenth centuries significant numbers of black slaves were brought from Africa to all of the following EXCEPT

(1) British North America
(2) The Caribbean Islands
(3) Brazil
(4) Argentina

	Omit	1	2	3	4*	Total
Percent	2.46	11.20	17.67	12.61	56.05	100.00
Mean Score	30.79	46.13	44.07	51.22	54.03	50.46

(12) 72. Each religion below is correctly matched with countries in each of which it either predominates or has a significant minority following EXCEPT

(1) Christianity..Greece, Lebanon, the Philippines, Ethiopia
(2) Islam..Saudi Arabia, the Soviet Union, Indonesia, Nigeria
(3) Buddhism..Japan, Thailand, Vietnam, Sri Lanka (Ceylon)
(4) Hinduism..India, Pakistan, Afghanistan, Kampuchea (Cambodia)

	Omit	1	2	3	4*	Total
Percent	5.91	31.92	41.96	7.15	13.06	100.00
Mean Score	40.25	48.55	51.63	44.33	59.36	50.46

(13) 70. Which grouping of the religions below presents them in descending size of estimated world membership?

(1) Christianity, Buddhism, Islam, Hinduism, Judaism
(2) Islam, Christianity, Hinduism, Buddhism, Judaism
(3) Hinduism, Islam, Christianity, Judaism, Buddhism
(4) Christianity, Islam, Hinduism, Buddhism, Judaism

	Omit	1	2	3	4*	Total
Percent	3.33	16.24	23.94	24.69	31.81	100.00
Mean Score	33.28	48.31	54.98	50.22	50.14	50.46

(14) 6. The largest groups of people living outside their home countries in 1978-1979 were made up of

(1) political refugees leaving or fleeing their countries
(2) foreign workers and their families working and residing in West European countries
(3) legal and illegal immigrants to the United States
(4) military forces of the United States and the Soviet Union stationed in the territories of allied countries

	Omit	1	2*	3	4	Total
Percent	1.99	36.04	10.93	31.19	19.85	100.00
Mean Score	45.12	52.10	53.48	46.71	52.25	50.46

(15) 32. Which of the following statements describes the trend in world population growth as of 1980 ?

(1) It is accelerating and total population is expected to triple by the year 2000.
(2) It is accelerating and total population is expected to double by the year 2000.
(3) It has begun to decelerate, but total population is still expected to increase substantially by the year 2000.
(4) It has started to decelerate, and therefore total population is expected to decline by the year 2000.

	Omit	1	2	3*	4	Total
Percent	0.87	6.57	36.84	52.59	3.13	100.00
Mean Score	21.06	50.10	51.00	51.33	38.61	50.46

(16) 19. A very high degree of interdependence is a basic fact of contemporary international life. Which of the following is NOT a significant consequence of interdependence?

(1) Interdependence intermingles domestic with foreign policies.
(2) Interdependence is associated with an increased willingness to renounce war as an instrument of national policy.
(3) Interdependence makes it highly probable that significant events in, or actions by, nation A will have serious effects on nations B, C, D, etc., and vice versa.
(4) Interdependence may make both self-sufficiency and dependency (e.g., reliance on imports of essential raw materials) difficult and costly.

	Omit	1	2*	3	4	Total
Percent	8.35	15.76	33.18	14.60	28.11	100.00
Mean Score	43.91	49.48	53.91	45.58	51.42	50.46

(17) 94. In recent negotiations for a law of the sea treaty, concern for which of the following has been most obvious on the part of the participants?

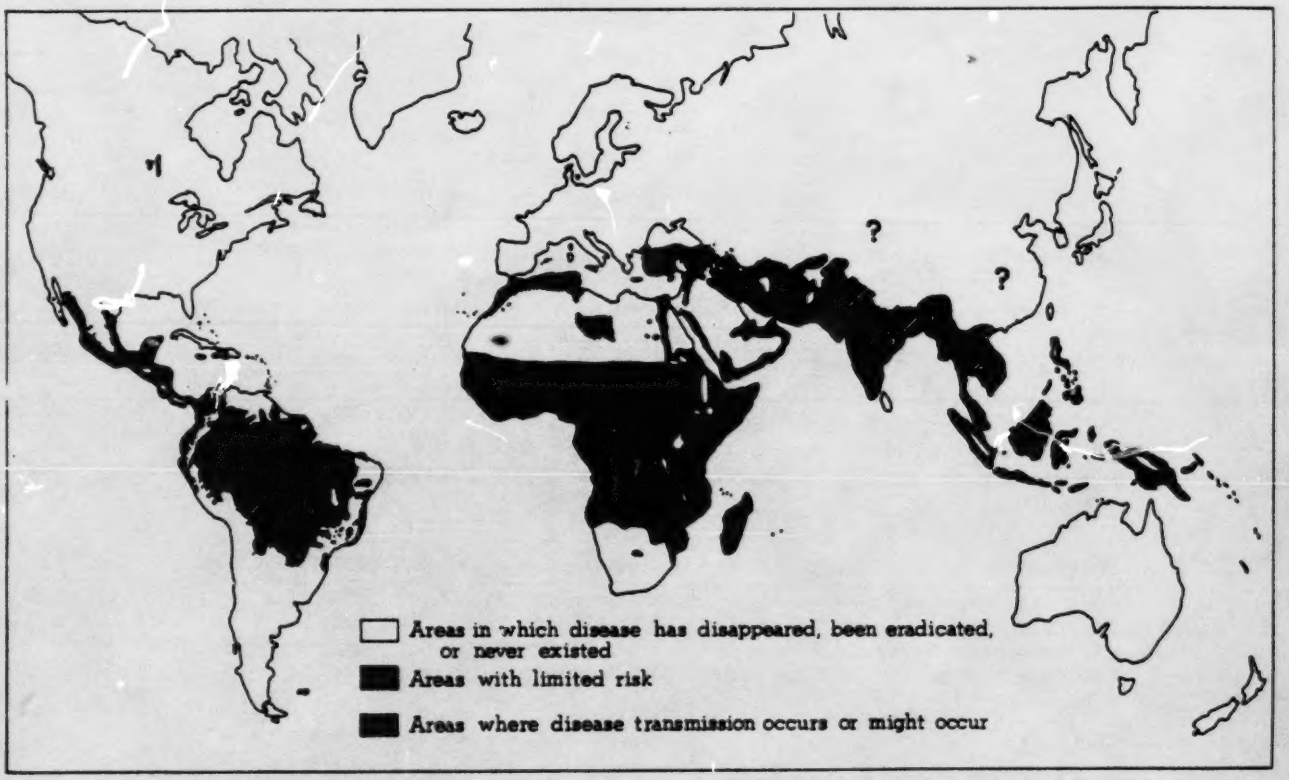
(1) Extension of national sovereignty over coastal waters
(2) Environmental protection
(3) Increased international cooperation
(4) Protection of seabed mineral resources

	Omit	1*	2	3	4	Total
Percent	5.92	46.85	15.65	16.83	14.75	100.00
Mean Score	36.65	53.64	47.40	46.02	54.20	50.46

(18) 109. In the North-South talks, representatives of developing countries have demanded all of the following EXCEPT

(1) the reduction of their level of economic interdependence with the industrialized countries
(2) the stabilization of world prices for their basic commodity exports
(3) increased control over monetary lending institutions such as the International Monetary Fund
(4) lower tariffs in industrialized countries for their exports

	Omit	1*	2	3	4	Total
Percent	18.67	24.91	16.85	27.49	12.08	100.00
Mean Score	45.32	55.51	51.26	50.29	47.26	50.46


Areas in which disease has disappeared, been eradicated, or never existed
Areas with limited risk
Areas where disease transmission occurs or might occur

(19) 25. The map above shows the distribution in the world today of which of the following diseases?

(1) Bubonic plague
(2) Malaria
(3) Typhoid fever
(4) Cholera

	Omit	1	2*	3	4	Total
Percent	7.08	1.67	63.74	13.18	14.33	100.00
Mean Score	47.07	38.83	51.58	47.69	51.04	50.46

LIST 3

APPARENT MISCONCEPTIONS OF ABOVE-AVERAGE SENIORS AND

PERCENTAGE HOLDING MISCONCEPTION

Energy

1. The economy of Brazil is less vulnerable than the U.S. to oil price increases or oil supply decreases. (70%)

2. Fossil fuels of petroleum, natural gas, and coal began being rapidly used at the time of the birth of Christ; since 1000 A.D. the rate of consumption has been decreasing and is now level; consumption will decrease from now on. (41%)

3. Syria, Lebanon, and Ethiopia are members of OPEC. (7%)

4. Developing countries are not integrated to world economies through the need for manufactured goods. (14%)

5. OPEC has been able to raise oil prices since 1973 because its members have become uniformly controlled by groups hostile to capitalism and the West. (22%)

Food

6. The global problem of inadequate nutrition is largely the result of large populations living in countries whose production of food is insufficient to provide the minimum number of calories required by each person each day. (61%)

7. The major advantage to China of growing rice is that China has surplus farm labor and few alternatives for employment. (26%)

8. Mechanization of agriculture is the only way of development for most countries that have a majority of their populations working in agriculture and earn most of their foreign exchange from agricultural exports. (21%)

Racial & Ethnic

9. The world distribution of the different cereal grains matches a map of the general distribution of human racial groups. (39%)

10. In the massive influx of European immigrants into the U.S. during the late 19th and early 20th centuries, Northern Europeans predominated over immigrants from Eastern and Southern Europe. (30%)

11. In the 17th and 18th centuries no significant numbers of black slaves were brought from Africa to Brazil. (13%)

Religion

12. Islam neither predominates nor has a significant minority following in the U.S.S.R., Indonesia, and Nigeria. (42%)

13. Islam has a larger world membership than Christianity. (24%)

Population

14. Political refugees leaving or fleeing their countries made up the largest groups of people living outside their home countries in 1978-79. (36%)

    Military forces of the U.S. and the U.S.S.R. stationed in the territories of allied countries made up the largest groups of people living outside their home countries in 1978-79. (20%)

15. The trend of world population growth today is accelerating. (37%)

Relations Among States

16. Interdependence will not make both self-sufficiency and dependency (e.g., reliance on imports of essential raw materials) difficult and costly. (28%)

Environment

17. In recent negotiations for a law of the sea treaty, the most obvious concern of the participants has been protection of seabed mineral resources. (15%)

International Monetary & Trade Relations

18. In the North-South talks, developing countries have not demanded the stabilization of world prices for their basic commodity exports. (17%)

Health

19. Today's world distribution of cholera matches a map of the distribution of malaria. (14%)

TABLE 8

GEOGRAPHIC CONTENT OF 19 SELECTED QUESTIONS

Question Number	Content Criteria							Total
	Use in Regional Synthesis	Distri-bution	Physical Environ.	Location	Land Use	Spatial Interaction	Spatial Behavior	
1	x	x	x	x				4
2		x	x		x			3
3	x	x	x	x				4
4	x	x	x					3
5	x		x					2
6		x	x		x			3
7	x				x			2
8	x				x	x		3
9	x	x		x				3
10	x	x		x				3
11	x	x		x				3
12	x	x		x				3
13	x	x						2
14	x	x		x		x	x	5
15	x	x						2
16	x		x		x	x		4
17	x		x					2
18	x	x				x		3
19	x	x	x	x				4
Total	17	14	9	8	5	4	1	

LIST 4

SENIORS' RESPONSES ON TWO DIFFICULT GEOGRAPHY ITEMS

14. Which of the following is the major reason why more and more countries in Asia, Africa, and Latin America have become net food importers in the last fifty years?

(1) Generally they have not had the resources to grow enough food to feed their populations.
(2) They have been encouraged to shift production from food crops to cash crops.
(3) Importing food has seemed desirable as a hedge against frequent crop failures.
(4) They have shifted a large part of the labor force to industrial production.

	Omit	1	2*	3	4	Total
Percent	1.73	52.38	19.72	6.15	20.02	100.00
Mean Score	38.25	50.14	56.21	43.93	48.71	50.46

47. Since 1945, political conflict and instability have often arisen as a result of racial, religious, ethnic, and linguistic differences within many states. Of the following, which three states contain within their boundaries the most ethno-linguistic diversity?

(1) Italy, Jamaica, Japan
(2) Czechoslovakia, Sri Lanka, the United States
(3) India, Nigeria, Iran
(4) Panama, Romania, Turkey

	Omit	1	2	3*	4	Total
Percent	4.13	11.01	49.23	29.98	5.65	100.00
Mean Score	39.36	44.33	50.11	55.42	47.23	50.46